

■ *Searching for a more effective way to handle acutely disturbed mental patients, one hospital turned to succinylcholine. Though the series was small (90 men), sufficiently good results were achieved to warrant further studies of this drug in larger groups. □*

Succinylcholine as a Modifier of Acting-Out Behavior

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Atascadero State Hospital is a maximum security facility designed to treat mentally disordered sex offenders, the acting-out mentally ill patient, and the criminally insane. Concentrated within its buildings are those individuals whose behavior has been such as to have them considered acute dangers to society.

Within the 1500 patient population, there exists a small number of individuals who continue their aggressive, acting-out behavior during their hospitalization. These patients have frequently been engaged in fights, verbal threatening, deviant sexual behavior, and stealing. Usually, they are not cooperative and are not involved with the hospital treatment program. The procedure followed to curb this unacceptable behavior has been to transfer the patient to a ward

for the acutely disturbed, medicate him and, if necessary, place him in restraint until the acute stage was past. Such a technique, while having historic precedent, is both time-consuming and costly in terms of individual benefit. A search for another technique was begun.

Methods and Materials

The drug, succinylcholine,[†] is a neuromuscular blocking agent used primarily as an adjuvant to electroshock treatment and surgical anesthesia. A single intravenous dose of 20 to 35 mg. becomes maximally effective within 34 to 40 seconds, progressively producing fasciculations and paralysis first in the small, rapidly moving muscles of the fingers, toes, and eyes through to the intercostal muscles and the diaphragm. At this point, a period of apnea is produced. During the entire period of muscular paraly-

sis there is neither loss of memory and consciousness nor clouding of the sensorium. Owing to the rapid hydrolysis of succinylcholine by the pseudocholinesterase of the liver and the plasma, the effect of the drug is very rapid and complete recovery from a single dose usually occurs within five minutes. The general psychologic effect is production of a decidedly unpleasant and fearful sensation.

Succinylcholine offers an easily controlled, quick-acting, fear-producing experience during which the sensorium is intact and the patient rendered susceptible to suggestion.

Ninety male patients were used in an exploratory study to determine the effectiveness of succinylcholine as an agent in behavior modification. The criteria of selection varied, but included persistent physical or verbal violence, deviant sexual behavior, and lack of cooperation and involvement with the individual treatment program prescribed by the patient's

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[†]Anectine® Chloride, Burroughs, Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y.

ward team. The subjects included overtly psychotic, mentally retarded, and sociopathic patients.

The number of treatments was predetermined by the ward doctor. The patient was administered an initial intravenous dose of 20 mg. of succinylcholine. Subsequent treatments sometimes required an increase in the dosage in order to meet the desired criteria of a 1.25-minute period of apnea. Positive pressure breathing equipment was at the treatment site if the patient's pulse slowed during period of apnea.

After respiration stopped, the talking phase of the treatment began. Both negative and positive suggestions spoken in a confident, authoritarian manner were made by the male technician. The negative suggestions concerned the obliteration of unacceptable behaviors such as fighting and stealing. Positive suggestions focused upon the patient's becoming involved with patient government, taking individual responsibility, and increasing constructive socialization. These suggestions continued throughout the period of apnea and until the patient could verbally respond to the technician. After the treatment was completed, the patient was returned to his ward and no other special attention formally given to him.

Results

The data revealed the following results: Improvement was noted in 61 of 90 patients, or 68 per

cent; 16 patients, or 18 per cent, were considered temporarily improved; no change was noted in 12 men, or 13 per cent; and in one patient (one per cent) the result was increased violence.

The subjects were rated on the basis of the frequency of acting-out behavior subsequent to the treatments. At this hospital special incident reports are made for each episode of aggressive or unacceptable behavior. The subjects were rated as improved if no incident reports appeared in his record for a period exceeding three months. Temporary improvement was noted when there were no incident reports for a one- to three-month period. The "no change" category included those patients whose frequency of acting-out behavior remained approximately the same after treatments as before. Only one patient appeared to have an adverse reaction to the treatments. Some patients have extended their trouble-free behavior to 18 months.

Discussion

The following illustrative case studies provide examples of the type of patients selected for succinylcholine treatment.

Case 1.—A patient of 26, convicted of kidnap and rape with subsequent violence to the victim, exhibitionism, assault with intent to commit robbery, and battery, within one month after admission became threatening toward a woman technician and struck another technician. He was given

three treatments. Marked improvement in his behavior has been noted for 18 months, and there has been no recurrence of violence since the treatment series.

Case 2.—A patient of 24, transferred from another state hospital because of sexual deviation (frottage of older females) and drug abuse (barbiturates), was a constant behavior problem for over two years. He had received 26 special incident reports ranging from attacks upon other patients and personnel to making suicide gestures. Striking a technician precipitated a series of succinylcholine treatments. His behavior stabilized within satisfactory limits for three months. After an argument with another patient, another single treatment was administered. Marked behavioral changes occurred at this time. Five months later this patient left the hospital and has functioned satisfactorily in the free world for the past eight months.

Summary

The basic question of the general effectiveness of succinylcholine treatment as an agent in the diminution of unacceptable, violent behavior appears to be answered positively based on the data. As in any exploratory study, more questions were raised than answered. Although the general effectiveness of this treatment appears established, the influence of many variables remains to be investigated in a series of carefully controlled studies. ■